

**WASHINGTON DEPARTMENT OF ECOLOGY**  
**ENVIRONMENTAL ASSESSMENT PROGRAM**  
**FRESHWATER MONITORING UNIT**  
**STREAM DISCHARGE TECHNICAL NOTES**

**STATION ID:** 46K050  
**STATION NAME:** Lake Creek  
**WATER YEAR:** 2006  
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**Introduction**

Watershed Description

Ecology's telemetry stream gauge is located 26 miles upriver from the town of Entiat, on the Entiat River Road/ Forest Service Road 51. Drainage area is steep, with 65 percent of the slope greater than a 30-percent grade. Canopy is 72 percent forested. This is a typical high mountain stream with boulders and large rock throughout. Area receives 60 inches of precipitation per year.

Gage Location

Gage is located in the Lake Creek Campground, just below main road, about 65 feet downstream. Gage house is on bank left, and staff is on bank right.

Table 1.

Drainage Area (square miles)	14
Latitude (degrees, minutes, seconds)	47 56 16
Longitude (degrees, minutes, seconds)	120 30 58

## Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	16
Median Annual Discharge (cfs)	6.0
Maximum Daily Mean Discharge (cfs)	118
Minimum Daily Mean Discharge (cfs)	3.5
Maximum Instantaneous Discharge (cfs)	136
Minimum Instantaneous Discharge (cfs)	3.3
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	4
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	48
Number of Days Discharge is Greater Than Range of Ratings	28
Number of Days Discharge is Less Than Range of Ratings	15

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

## Narrative

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## Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	13
Weighted Rating Error (% of discharge)	12
Total Potential Error (% of discharge)	25

## Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	3	4	
Period of Ratings	05/29/03 to 04/25/06	05/18/06 to 05/05/09	
Range of Ratings (cfs)	2 to 56	4 to 74	
No. of Defining Measurements	5	12	
Rating Error (%)	11	13	

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

## Narrative

Rating table 3 is used 60% of the time, and table 4 is used 40% of the time. Five discharge measurements were taken for the period of record, ranging from 5.1 cfs to 74 cfs.

## Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	0.39
Maximum Recorded Stage (feet)	1.65
Range of Recorded Stage (feet)	1.26
Number of Un-Reported Days	82
Number of Days Qualified as Estimates	54
Number of Days Qualified as Unreliable Estimates	11

## Narrative

To correct for instrument drift, the stage record has been adjusted to known site observations. The average difference in predicted daily flows between raw and adjusted data sets is 13%. The stage record had 82 days of missing data, of which 43 days could not be filled by correlation station 46A150 Entiat River at Tommy Creek Bridge data, because station data is either missing or was ice-impacted.

## Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	None
Range of Modeled Stage (feet)	
Range of Modeled Discharge (cfs)	
Valid Period for Model	
Model Confidence	

## Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
None	

## Activities Completed

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